

JPRS 78099

18 May 1981

# USSR Report

ECONOMIC AFFAIRS

No. 962



FOREIGN BROADCAST INFORMATION SERVICE

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## ECONOMIC POLICY, ORGANIZATION AND MANAGEMENT

### BUNICH DISCUSSES SOCIALIST MANAGEMENT

Moscow IZVESTIYA AKADEMII NAUK SSSR-SERIYA EKONOMICHESKAYA in Russian  
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/Article by P. G. Bunich: "Structure of Economic Management Under Socialism" 17

/Text/ A special functional management subsystem is made up of the dissemination of advanced experience in adopting new technology, modernizing product, reducing costs, improving production control and others. All links of sectoral, territorial and program management are directly engaged in disseminating this experience. This policy is seen in subsystems of the plan, incentives and others. To strengthen the process of putting advanced experience into practice, special services are engaged in its dissemination and the general subsystems. This includes exhibitions featuring the achievements of the national economy; scientific and scientific-practical conferences; the press; radio; television; educational programs in schools of advanced experience and in schools of communist labor and in programs for increasing skill-levels. Various public organizations (the All-Union Society of Knowledge, AUCCTU, scientific-technical societies, VOIR /All-Union Society of Inventors and Rationalizers/ and others), etc., also participate in spreading the word on advanced experience.

Socialist society pursues an active social policy. The system of wages (strictly according to pay by results of labor) and retail prices (according to the effectiveness of the goods being sold) is augmented by a special subsystem for providing social norms of living standard. The subsystem calls for the establishment of a minimum wage; providing workers more health care, education and so forth in the form of public consumption funds; introducing substantially reduced prices for several important goods and services; 2 and rapidly improving the material, cultural and day-to-day living conditions of rural workers, bringing these conditions into closer alignment with those of workers in the cities and raising the skill-level and quality of agricultural workers by converting their labor into a form of industrial labor.

Modern city-building concepts, aimed at restricting stressful situations caused by the extreme overcrowding, availability of multi-family apartments and great distance of work from home, etc., are formulated by considering specific social norms.

Of importance are the social norms for the length of the work day, week and vacation, the use of the labor of adolescents and women, and the intensity of work. Strict control is observed over working conditions, including work safety and the creation of the safest equipment. Great importance is attached to increasing the creative content of labor based on the adoption of production processes which make it possible to "transfer" uninteresting and heavy labor to machines.

Special social norms provide for the realization of equal rights for women and men (for example, associations, enterprises and organizations are given annual assignments for training and improving the work skills of female workers).

Special rules govern the living conditions of the disabled. The organization and payment for their labor are specific. Certain categories of the disabled have different privileges: for income taxes; apartment rent; payments for heat, water, gas and electricity; free use of the city transportation system (sometimes this includes the railroad and ships of the river fleet). The disabled receive priority in the allocation of living space. Often they receive increased pensions. There are also special privileges for those who participated in the civil war, WW II and others.

The subsystem for providing social norms of living standard includes expenditures for these needs and methods for their planning and the use of incentives (in particular the payment of subsidies to producers of product that is sold for comparatively low social prices).

When some benefits are in limited supply due to a shortage of resources and product, it is necessary to take steps to overcome the shortage; but as long as it persists, measures must be taken to regulate the shortage. General functional subsystems (in particular, such elements as prices) are used to soften the impact of the shortage. At the same time, especially when it is necessary to increase prices, methods for the rigid funding of the articles in short supply are used and maximum norms for their sale are introduced. In addition, the total volume of distribution is limited, special systems of accounting and organizational forms of distribution of the product in short supply are established, and larger fines are imposed for the overexpenditure of resources as compared with the norms. Thus, starting on 1 July 1978 special payment was introduced for exceeding natural gas expenditure limits; and since 1975 at enterprises and electric power stations increased, not less than 1.5-fold, fines are imposed for above-norm losses during the extraction of solid minerals. 4

Preferential terms are created for enterprises which extract scarce resources from the worst kinds of raw material. The orientation of these enterprises to overfulfill the plan is often strengthened by implementing special incentives to encourage the above-plan production of manufactured articles.



Not only goods, minerals and other natural resources can be scarce; labor resources, too, can be in short supply. In this case special measures are taken to conserve manpower. The ministries and associations (enterprises) are limited in the numbers of workers and employees that they can employ. They are also affected by the new indicator - reduction in the use of manual labor. The associations (enterprises) and organizations are given annual assignments for training workers of a higher skill-level. The more acute the shortage of labor resources, the stricter the control over the distribution of the graduates of the production-technical institutions, technical schools and schools of higher learning; and the use of the labor of those on pension is being expanded. To overcome the shortage of skilled personnel they are using a mechanism to encourage the training and retraining of specialists. This includes establishing increased stipends (which compensate for the temporary reduction in income during the training period) and guaranteeing the former salary during the training periods, etc. Both direct assignments and fines for failing to observe the assignments can promote a ceiling on labor.

The subsystem for freeing and redistributing labor resources is largely in agreement with the subsystem for regulating and overcoming a shortage (particularly of labor resources) and also with the subsystem for management of the assimilation of new territories and the development of formerly backward regions. Still it is included in a separate subsystem because even when easing the shortage in work force and the development of production in areas that have long ago been assimilated, society must free and redistribute labor resources on a planned basis.

A socialist society while developing a planned migration of the work force has a stake in restricting personnel turnover and keeping labor resources in place. These goals are served by a special subsystem for keeping labor resources in place. The subsystem includes, in particular, additional pay for seniority (longevity) at a given enterprise; distribution of the annual bonus in view of seniority at a given enterprise; the job responsibility of workers at a given enterprise over a specific time period; if workers studied in institutions of higher learning on travel orders issued by the enterprise, it is necessary to return subsidies for cooperative housing that were given to the workers from the social-cultural measures and housing construction funds; if the workers leave the job on their own volition; a system for making labor contracts which require workers to remain at a given enterprise for a certain period of time, etc.

There is also a subsystem of additional controls over the use of production funds, which either stimulates the better use of such funds or relieves the associations (enterprises) of certain financial obligations to strengthen their interest in capital investments of a certain type. Thus, the state takes special steps to encourage the ahead-of-schedule assimilation of production capacities and may permit (in some socialist nations) the speeded-up amortization. The state may also offer benefits for using the funds to pay for the construction of projects, the functioning of which is connected with the receipt of a social effect, and may release from payment those funds that are temporarily out of use according to decisions of higher organs, etc.

The "vertical line" of the structure of the economic mechanism for controlling a socialist economy is formed by linear-sequential subsystems of the cycle for the creation and consumption of product. The traditional sectors of the national economy are usually called the linear subsystems. The approach from the position of linear-sequential "technology" is perceived as preferable since it reflects the internal logic of economic ties. 5

Fundamental research, applied scientific projects, designing, building, the production of the means of production, their distribution, circulation (trade), the production of consumer goods, their distribution, circulation (trade), and consumption are broken down into linear-sequential subsystems. Within the production of the means of production, the manufacture of equipment and capital construction serve as the primary subsystems, which make it possible to form new enterprises. Transportation and communications, etc., are repeatedly included in the cycle of the creation and consumption of product.

This linear-sequential subsystem does not reflect the redistribution and change of production factors, including the tools of production and the work force by type of activity; in this respect the subsystem only precedes production and forms its prerequisite. The exchange of activity which is accomplished in production has a direct bearing upon production, of course.

The use of production factors takes place again during the production phase, but not during consumption; in our schematic the consumption phase only relates to product earmarked for direct consumption.

Within the framework of each linear-sequential subsystem there are hierarchical levels of vertical sector management. As they apply to the production of the means of production in industry, the following such levels can be identified: national economic, ministry (department), production association (enterprise), production unit, shop, section, brigade, link, and work space. In some cases use is also made of such levels as individual production facilities and buildings. In the hierarchy of vertical sector management they fall between the production units and shops. Sometimes the individual work shift is also seen as one of the levels. 6

In some cases the list of levels is reduced: under a two-link system of sector management there are no industrial associations; under the non-shop structure there are no shops; and not every level has production sections. There are associations, in which, on the contrary, there are no production units but there are shops.

Sector management is accomplished at the national economic level, since within the system of a unified multi-sector national economic complex the sectors are the largest "aggregates". The availability of intersectoral production facilities does not contradict the division of the sector as the largest unit in the system. This is explained by the fact

that the inter-sectoral production facilities are the same sectors which produce goods that can be used in many sectors, such as the manufacture of castings, forged pieces, and so forth. Sometimes the fuel and power complex, the general machine building complex, transportation complex, the agroindustrial complex, the construction complex and others are called intersectoral complexes. In this case we are speaking about sectors that are viewed on an enlarged scale, in the form of homogeneous multi-sector formations.

The activity of the national economic organs at the highest level is of both a headquarters and functional-support nature. For the highest headquarters organ of the system the solution of cardinal central problems, primarily the planning of the more general directions for the development of the national economy and its proportions, the determination of the totality of the social levers and spheres of their relevance, the creation of legal norms, and providing the inter-state requirements for foreign economic ties, etc., are most characteristic. If there are subordinate ties between the headquarters of the system and its functional-support services, then there are coordination ties between the functional-support services. In accordance with these forms of ties for problem solving, which touch upon the interests of several subelements, sometimes consolidated commissions, working groups, which are managed by a staff or functional worker, are created. The functional worker, as the one responsible for a program, is given staff powers (power of attorney powers go only to those who have received them and who cannot delegate them further). Let us assume, that it is necessary to comprehensively improve the economic management mechanism. Such a job is the responsibility of a person who has a great deal of authority, but the commission is composed of representatives of the planning, financial, supply organs and the information support, etc.

The functional-support organs at the highest level (ministry, department) in addition to their primary function perform several other functions as well. For example, the USSR Gosplan is engaged in management in addition to planning. The same is true of the USSR State Committee for Material and Technical Supply, the USSR Ministry of Finance, the USSR Gosbank, the USSR Srobybank, the USSR State Committee for Prices, the Ministry of Foreign Trade, the State Committee for Foreign Economic Relations, the Foreign Trade Bank, and others.

Staff and functional-support organs of the highest level have two vertical sections: first, they determine the formation of the appropriate lower-ranking level in the ministries (departments); second, in some cases they are in charge of their own periphery. Thus, the USSR Council of Ministers as its lower-ranking territorial levels has the councils of ministers of the union republics, the autonomous republics, and the executive committees of the councils of peoples deputies; USSR Gosplan has the planning committees of the union republics, the autonomous republics, the planning organs of the executive committees of the councils of peoples deputies. The USSR State Committee for Material and Technical Supply, the USSR State Committee for Prices, the USSR



State Committee for Labor and Social Problems, the USSR Ministry of Finance, the USSR State Committee for Standards, the USSR Committee of People's Control, and others have peripheral organizations.

The main feature of national economic organs is that they can approach the development of each sector only from national economic positions and are governed only by the interests of overall feasibility and advantageousness without permitting the development of some sectors at the expense of the uncompensated detriment to the others.

To make decisions that are best for all of society, the top-level national economic organs need a broad range of information (of course, not detailed information, but aggregate information), which they receive from the information support subsystem. This subsystem includes materials supplied through special channels of information support, for example, from the USSR Central Statistics Administration and from the most common functional subsystems (USSR Gosplan, the USSR Ministry of Finance, etc.), the sectoral ministries (departments), which have their own information support.

The next management level is the level of the ministry (department). In legal literature this level is called the highest link of the economic system. In our opinion, the highest link is the sector management level in its national economic interpretation, for it is at this level that national economic approach is possible to the greatest extent, which makes it possible to make the best decisions and to determine the targets of the ministry (department) level and the ways to achieve them. The ministry (department), which controls a sector, is at once a staff (integrating all functional-support subsystems on its horizontal) and a functional-support organ.

This level includes the all-union, union-republic ministries of the USSR and also the republic ministries of the union and autonomous republics, the production and sectoral administrations of the executive committees of the councils of peoples deputies of several large cities, and those not subordinate to the ministries. Similar powers are held by central departments such as the Main Administration of the Microbiological Industry under the USSR Council of Ministers and the USSR Central Union of Consumers' Cooperatives (the latter considering the specific nature of the cooperative form of ownership). 7

In all other cases the republic ministries of the union and autonomous republics, the production and sectoral administrations of the executive committees of the councils of peoples deputies, and those not subordinate to ministries, can be considered as a central link of the economic system only on a legal basis, since in effect their area of activity is as a lower-ranking subsystem of the sectoral economic system.

If the ministries control sectors, the state committees carry out the management of the spheres of management that are inter-sectoral, and from these positions the state committees can be considered to be at the national economic level. At the same time some state committees

are directly in charge of associations (enterprises) without any intermediate stage of management in the form of a sectoral ministry (department). For example, there are many supply organizations subordinate to the USSR State Committee for Material and Technical Supply; 8 there are repair enterprises, trade organizations for the sale of equipment, spare parts, fuels and lubricants, and mechanized detachments subordinate to the State Committee for Supply of Production Equipment for Agriculture. The USSR State Committee for Forestry is in charge of timber management enterprises. The USSR State Committee for Publishing Houses, Printing Plants and the Book Trade is in charge of printing enterprises, publishing houses and book supply bases and stores. The USSR State Committee for Television and Radio Broadcasting is in charge of television centers, etc. Such state committees at the USSR level are centers of economic systems of the ministry (department) type.

Apart from the authority to solve tasks having to do with the development of production within the framework of its ministry (department), these state committees have powers of an over-departmental nature. In particular, a ministry, which is the leader in the production of a product which is manufactured by enterprises of several ministries, is fully responsible for filling national economic requirements for the needed assortment and quality of a product. The ministry participates in the planning of the product manufacture by enterprises not included in its system and draws up questions connected with improving the technical quality of product.

Some functions of lead ministries need to be further improved, in our opinion. For example, it is very important to strengthen the coordination mission of lead ministries 9 for the production of consumer goods of which 30 percent are produced by sectors of the industrial group "A". In this regard it is important that the lead ministries more fully coordinate the work of these sectors in the production of consumer goods. Otherwise their product is planned by local organs for their own needs and there is a lack of the needed concentration, specialization, and so forth.

The ministries (departments) use less information than the higher-ranking national economic organs, but they receive information in a more specific form.

The next level of management is the industrial association. This level is a middle-link economic system. It includes industrial associations, union-republic ministries of union republics, production and sectoral administrations of the executive committees of the councils of peoples deputies, the ministries of autonomous republics and in essence also the production administrations of the administrations of the councils of peoples deputies, those not subordinate to ministries, the republic ministries of the union republics. 10 Characteristic is the fact that according to the decree of the USSR Council of Ministers of 27 March 1974, which ratified the general Statute on the all-union and republic production associations, the ministries of the union republics can organize their own activity on the conditions of the industrial

associations. The decree speaks about the ministries of the union republics on the whole, subsequently, and about republic-level ministries which according to legal norms are considered higher links of sectoral management; but in this case they are "lowered" to middle-level links.

At the level of the production associations (independent enterprises) there is both staff and functional-support activity.

In the sectors of the national economy there are (or the possibility exists for there to be) several types of production associations, including the scientific-production association (NPO), scientific-technical association (NTO), academic scientific-technical association (ANTO), learning-production association (UNPO), 11 agro-industrial association (APO), lumber-industry association (LPO), marine-industrial association (MPO), production and trade association (PTO), supply and sales association (SSO), transport-production association (TPO), construction and installation association (SHO), designing and construction association (PSO), household maintenance association (OHO), cultural and household firms (KBF), tourist association (TUR), and others. They are not named in the structure of sectoral management that is being studied. The problem is that the NPO and NTO correspond to the level of the production association, but are not part of the "production of the means of production" stage. Instead they are part of the previous stages of product creation - applied research, designing, building, manufacture of the first models of new product (equipment). The ANTO also includes the stage of fundamental research and is therefore included either in the system of the USSR Academy of Sciences (union republic) or has dual subordination - the Academy of Sciences and the sectoral ministry. 12

The PTO integrates production and trade, which mediates relations between the production of consumer goods and the consumer himself. The SSO is also a part of the product circulation sphere. The TPO combines transport functions of the product creation-consumption cycle with the manufacture of trailers, the repair of transportation equipment and other forms of production service. The APO is the equivalent of a production association in the sphere of food production. For this reason the APO is part of the lower-ranking stage of the product creation-consumption cycle - "the production of commodities for consumption." This also incorporates the OHO, KBF, and TUR. The PSO integrates the designing and construction as two phases of the investment process placed above the "production of the means of production", if we understand by this the manufacture of the means of production manufactured with their assistance. 13 The SHO also precedes the manufacture of the subsequent means of production. Between the production associations, NPO, NTO, ANTO, PTO, SHO, MPO, TPO, PSO and several others there are the relationships of vertical, juridical equal partners, but no direct administrative co-subordination. 14 Information within the framework of the production associations (independent enterprises) of all previously named levels of sectoral management is the most detailed.

The territorial (spatial) structure of the organs of sectoral management is the consequence of combining in the mechanism for managing the



economy of the sectoral principle with the territorial. By the territorial approach V. I. Lenin understood the concern for the development of the sum of all economic relations, the sum of all economic turnover of an area. 15 Due to this combining, the "projections" of a sector for a specific territory, or its "secondary" structure, it is possible to strengthen the comprehensive development of each rayon and to prevent the disproportions in it between the sectors of specialization and production facilities which are needed everywhere.

The review of sectoral draft plans from a territorial point of view makes it possible to increase the effectiveness of sectoral solutions by forming unified power services, concentrating construction, creating common railroad lines and highways, unified water supply systems, a common city building complex, repair plants for all enterprises within a given rayon, and the comprehensive utilization of raw materials. Territorial planning makes it possible to also increase the percentage of the active portion of fixed assets by decreasing the number of individual buildings, standardizing construction parts, and making better use of the grounds surrounding an enterprise. The study of the experience in creating industrial units has shown the feasibility of cutting back as compared with isolated construction of a number of auxiliary buildings and structures by 30 percent, the construction of building space by 10 percent, the number of standard construction parts by 70 percent, space needed for the process of rebuilding on the average by 40 percent. The territorial approach helps to clarify the sectoral forecasts from the point of view of providing them with a work force. Since the territorial approach identifies labor resources, it makes it possible to adjust plans for the construction of housing, the development of the social infrastructure on the whole, and also the plans for commodity turnover. Territorial planning makes it possible to fully identify the ecological consequences of developing the sector and to determine the need for protective measures and the costs for carrying them out.

Among the tasks of territorial management is also included the management (or regulation) of the activity of the territorial economic systems, located within the territory and meeting its needs. This includes local industry subordinate to republic ministries of union republics and executive committees of the councils of peoples deputies, industrial and production associations of union-republic and republic ministries, specializing in meeting the needs within a republic, region, kray, oblast, city or rayon.

The territorial aspect has greater national economic significance for the correct formation on a local basis of complexes of interconnected sectors or territorial-production complexes (TPK). At present such TPK's are already being developed (and their management as multi-sector associations). This includes the Kursk, Orenburg, Nizhnekamsk, West-Siberian, Sayan, Bratsko-Ust'-Ilimskiy, Southern Yakutsk, Pavlodar-Ekibastuzskiy, Karatau-Dzhambul', Mangyshlak, Southern Tajik and other TPKs. 16



In recent years a great deal of work has been done to ensure the rational combining of the sectoral and territorial aspects of management. The competence of local management organs has been expanded - the councils of ministers of the union (autonomous) republics, kray, oblast, rayon, city, rayons within cities, and rural executive committees of the councils of peoples deputies. The coordinating and controlling role of local organs has been increased in solving questions having to do with the construction of projects for social-cultural and domestic uses, the production of consumer goods, local construction materials and other matters connected with servicing the population of a city, rayon, regardless of the subordination of these enterprises. For example, the city and city rayon executive committees of the councils of peoples deputies can make suggestions about reorganizing (or eliminating) enterprises within their jurisdiction that are subordinate to higher ranking levels. The competence has been expanded in the area of coordinating and controlling the activity of enterprises of higher subordination and kray (oblast) organs. Thus, the enterprises and organizations of all-union subordination must submit draft plans not only to their higher-ranking organs, but also to the planning commissions of the executive committees of the kray (oblast) councils of peoples deputies. In Moscow, Leningrad and Leningrad Oblast they have introduced a procedure for developing and approving comprehensive plans for economic and social development.

Of particular importance is the role of the territorial approach during the initial siting of enterprises within a certain rayon by taking into consideration the use of common auxiliary production facilities. In this regard, the USSR Gosstroy and the USSR Gosplan have approved a Statute governing the procedure for designing, planning and financing the construction of projects that are common for a group of enterprises (industrial center). The Statute states that the construction of new enterprises (also those that are being expanded or modernized) must, as a rule, be done within the group of enterprises with common projects of auxiliary production facilities and buildings, installations and utilities. 17

According to the USSR Constitution, the comprehensive economic and social development within a union republic and an autonomous republic is to be done (within the limits of their powers) by the appropriate republic state organs of management, and also the the councils of peoples deputies. The Decree of the CPSU Central Committee and the USSR Council of Ministers "Improving the planning and strengthening the influence of the economic mechanism upon raising the effectiveness of production and the quality of work" (12 July 1979) calls for proposals concerning the draft plans for the comprehensive economic and social development of associations, enterprises and organizations of all-union subordination within a republic to be submitted to the councils of ministers of the union republics. For this the councils of ministers of the union republics will receive from the USSR ministries and departments control figures and the basic indicators of the drafts and the ratified plans of the associations (enterprises) and organizations of all-union subordination, located within the appropriate republic.

The needed data will also be supplied directly by the associations and organizations and state planning committees of the union republic and autonomous republics, the kray, oblast, and city planning commissions.

The councils of ministers of the union republic and autonomous republics, the executive committees of the kray, oblast and city councils of peoples deputies have been made responsible for developing balances of labor resources for the republics, krays, oblasts and cities; and in the RSFSR they also have to compile labor resource data for the economic regions. The councils of ministers of the union republics compile balances of cash receipts and outlays of the population for the autonomous republics, krays, and oblasts. The councils of ministers of the union republic and autonomous republics, the executive committees of the kray, oblast and city councils of peoples deputies have been given the job of compiling and approving of summary plans for the production of local construction materials, the manufacture of consumer goods, and plans for the construction of housing and cultural and domestic construction. To coordinate the capital construction plans using the capacities of construction organizations and labor resources the councils of ministers of the union republics have been given the task of developing and submitting to the USSR Gosplan and the appropriate USSR-level ministries draft plans of the contract work to be accomplished by union-republic ministries of these republics. The councils of ministers of the union republics participate in developing programs for solving important regional problems, the formation and development of the most important TPKs, plans for the development and siting of sectors of the national economy. They also participate in compiling territorial balances of the production and distribution of the more important kinds of product, in accordance with which the transport ministries determine plans for optimizing freight flows.

Based on the above, one can conclude that within the economic mechanism the following must be coordinated: all functional-service subsystems at each level of sectoral management; all stages in the product creation-consumption cycle; the sectoral aspect of management and the territorial aspect of management. When such coordination is accomplished in the estimate for a manufactured article (final or intermediate), group of manufactured articles, a single goal, a group of goals, a new division of management comes into existence - the program division. For example, in the Ministry of the Electrical Equipment Industry a system for financing and stimulating scientific developments according to topics through the leading institutions rather than according to organizations was approved for the first time. This procedure is now used in all sectoral ministries and departments. A characteristic feature of the program approach is not in the planning "for the program" of all needed production facilities (this is the principle requirement of planning in general, regardless of the programs), but in organizing the unified management of their realization - allocating to the primary material fund holders, the distributors of investments, labor resources and reserves for accomplishing the program on the whole. In other words, in adopting the co-executive relations of co-subordination, subordination, as this takes place at the level of the program of programs - the management of the nation.

The creation of specific organs responsible for a certain program can be illustrated in these examples. To fulfill the Comprehensive program for the socialist economic integration of the CEMA member nations in each of the countries they created the position of special deputy chiefs of the government. The realization of the most important scientific-technical programs is controlled by the USSR State Committee for Science and Technology. The management of all work connected with the construction of the BAM is under the auspices of a commission headed by a deputy chairman of the USSR Council of Ministers. 18 The importance of the program approach is strengthened in conditions of the growth and increased complexity of inter-sectoral ties.

The program approach can be aimed at solving various tasks. Thus, at the 25th Party Congress among the primary programs it was proposed to develop a program for the development of a nuclear power production base, a program for mechanizing manual and heavy labor and others. 19 In the near future it is projected to plan programs for foodstuffs, conserving fuel and metal, the development of an economic area of the BAM, reducing the use of manual labor, and increasing the production of new consumer goods.

Programs "outline" and "assemble" purposeful "centers" (which is why they are called program-target centers) at various levels of sectoral and territorial management. For this reason programs at the national, republic, kray, city, association, and so forth, levels are distinguished one from the other.

All subsystems of the economic mechanism must be coordinated according to time periods as well. Thus, the production plan and the material-technical supply plan must be coordinated according to time periods. Time period sequence must be observed when developing the price plan and the production plant (in the final version). It is necessary to adapt the time periods for compiling plans and concluding contracts, the time periods for changing natural assignments and profit, for issuing orders, planned needs. It is also necessary to ensure the correlation of construction time periods with material, technical and labor support of the enterprises, the adoption of technical progress and the planning of its return.

While completing the review of the structure of the mechanism for managing the economy of a developed socialist society, we bring attention to the fact that several of its components are duplicated by several subsystems. This reflects the fact that they perform several functions. Thus, prices are initially analyzed as an integral part of the plan development, and then as one of the general control parameters which promote the fulfillment of planned assignments. Output norms are viewed in connection with the development of labor balances and as an element for their pay. Naturally there are close ties between these aspects, which require a purposeful mechanism of action.



The study of the essence, structure and methodological principles of the economic mechanism of a developed socialism and on this basis its further improvement comprise one of the more pressing tasks of modern economic science and practice.

#### FOOTNOTES

1. Conclusion. Beginning can be found in Izv. AN SSSR, ser. ekonom. /News of the USSR Academy of Sciences, Economics Series/ 7. 1980, No. 6.
2. Among the socially low prices are the already mentioned subsidized retail prices for childrens' goods, apartment rents and utilities charges which have remained stable since 1928 (although during this period there has been a significant improvement in the provision of conveniences in housing and the quality of services has increased), which cover more than one third of the outlays of the population for these purposes (apartment rent in the USSR does not exceed on the average more than 3 percent of a worker's income. See Narodnoye khozyaystvo SSSR in 1978 /The national economy in 1978/, p 397), retail prices for certain basic foodstuffs (meat, milk, etc.), for plates for dental aids, many medicines, public-political literature, gold engagement rings, etc. (See PRAVDA, 1979, 1 July).
3. In 1979 the average length of the work week of workers and employees was 39.4 hours (PRAVDA, 3 February). The average established length of vacation for adult workers and employees is 21.6 days (NARODNOYE KHOZYAYSTVO SSSR v 1978, /The national economy of the USSR in 1978/, p 376.)
4. Without such measures the distribution of scarce articles could lead to a failure to meet the planned requirements of production, violate the socialist principle of pay according to the results of labor, and create conditions for speculation.
5. To the point, it shows that the ties between economic partners at various stages of the product creation-consumption cycle are vertical rather than horizontal.
6. In some sectors the number of levels are greater: in particular, in the light and food industries management is accomplished according to a four-link schematic, in which the middle link is submitted to two systems. There are production facilities where the level of the ministry is broken down into several sublevels: union-republic ministry of the USSR and union-republic ministry of a union republic. The sublevel of a USSR union-republic ministry sometimes includes several union-republic ministries of a union republic instead of one according to a narrower directions. Thus, within the system of the USSR Ministry of Light Industry there are two RSFSR ministries: the Ministry of the Light Industry and the Ministry of the Textile Industry.



7. In particular, the rights of the Central Consumers' Cooperative in regard to the distribution of property of the system are narrower than the rights of the ministries (departments).
8. With the exception of those that are subordinate to the RSFSR State Committee of Material and Technical Supply. As regards the system of the latter the USSR State Committee for Material and Technical Supply performs on methodological management.
9. For the production of industrial consumer goods by a leading ministry we have not only the USSR Ministry of the Light Industry, but also the heavy industry ministries, such as the USSR Ministry of Ferrous Metallurgy which produces enamel ware and galvanized ware, kitchen ware of stainless steel, wind-proof lamps and others. It is believed that as the production of durable consumer goods increases (refrigerators, automobiles, etc.) more heavy industry ministries will be involved as leading ministries; this progressive process is sound.
10. In other sectors of the national economy the middle management link includes agricultural production associations, railroad lines, territorial construction administrations, main administrations for material and technical supply in the union republics and territorial administrations in the RSFSR, trade administrations, territorial administrations of civil aviation (in some union republics they equate to republic production associations), maritime steam ship agencies, and line main administrations of the Ministry of Foreign Trade, and others.
11. A "learning component" can also exist in other types of associations, for example, in scientific-production associations, agro-industrial associations, design and construction associations, scientific-design associations, etc. Institutions of learning, included in the associations, subordinate the subject matter of the degree work and scientific research to production interests, the designing of new product, and promote the raising of workers' skill level. In turn, the managers and leaders of production present lectures to the students and teachers and conduct courses directly in a working situation. An example of a training-scientific-production association is the Spetsmaterialy association, which incorporates the Rubeshanekiy branch of the Voroshilovgrad machine building institute, the Institute of Physics and Organic Chemistry and Carbon Chemistry of the UkSSR Academy of Sciences, and several enterprises (Designing the organizational structures of management of production. Kiev, NAUKOVA DUMKA, 1979, p 111.)
12. For example, there is the ANTO, which includes the Institute of Electrowelding imeni Ye. Paton of the UkSSR Academy of Sciences and a subdivision of the Ministry for the Construction of Enterprises for the Petroleum and Gas Industries (PRAVDA, 1979, 19 Jan).

13. Design organizations are included in the construction associations, in particular when creating construction projects in the petroleum and gas industry, in electric power projects and in land reclamation work.
14. In other sectors of the national economy sovkhoses, railroad divisions, production and construction-installation associations, stores, all-union cost accounting foreign trade associations, aviation detachment associations, ocean going vessels and others are included in the primary link.
15. See Lenin V. I., Complete works, vol 43, p 234.
16. See Materialy XXV s'yezda KPSS /Materials of the 25th Party Congress/, Moscow, Politizdat, pp 225-227, 230, 233.
17. Byulleten normativnykh aktov ministerstv i vedomstv SSSR /Bulletin of standard formal documents of USSR ministries and departments/, 1976, No 12, p 3.
18. In several socialist countries programs are administered by comprehensive ministries, for example, the Ministry of Agriculture and the Food Industry of the Hungarian People's Republic, the Ministry of the Food Industry and Procurement of the Polish People's Republic, the Ministry of Mining and Petroleum Industry and Geology of the Socialist Republic of Rumania, the Ministry of Agriculture, Timber Industry and Food Products in the German Democratic Republic, and the Ministry of Metallurgy and Machine Building of the Czechoslovak Socialist Republic.
19. See Materialy XXV S'yezda KPSS /Materials of the 25th Party Congress/, p 130.

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## REGIONAL DEVELOPMENT

### DEVELOPMENT OF INDIVIDUAL SIBERIAN REGIONS DISCUSSED

#### Buryat ASSR

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO)  
in Russian No 2, Feb 81 pp 20-49

/Article by A. U. Modogoyev, First Secretary of the Buryat Oblast Party  
Committee: "Handling Natural Resources Wisely"7

/Text7 We note with satisfaction that in accordance with the strategic policy of the Party aimed at the comprehensive development of Eastern Siberia, the USSR Gosplan, RSFSR Gosplan and many ministries are demonstrating considerable attention toward our republic. This economic strategy, expressed in the need to quickly develop Eastern Siberia, was formulated in the decision of the 24th and 25th Party congresses. The five-year plan that preceded the 26th Party Congress demonstrates that this Party strategy is being successfully realized. On a large scale new basic production assets are being put into operation. Large enterprises have been built. Among them are the Selenginsky cellulose-cardboard combine, the Gusinozerskaya GRES, the Kholbol'dzhinskiy coal field for 3 million tons of extraction, a house building combine for 140,000 square meters of living space, and also large facilities for meat and poultry production, land reclamation systems and many other projects. Two million nine hundred thousand square meters of living space have been built; schools for 31,000 students; and hospitals with 2,300 beds have been constructed.

The amount of industrial production during this period increased 1.6-fold, and the average annual production of agricultural products during the past ten years, as compared with the ten years before that, has increased by 20.3 percent. The prospects for the future are impressive. In the northern part of the republic, the Baykal-Amur Railroad passes through uninhabited territory. The new industrial complexes of the Ozernoye polymetallic combine and the Oshchurovskiy apatite enrichment combine have been erected. The large territorial-production complexes that have grown up around these combines will significantly increase the level of the republic's industrial development.

The results, however, could be more significant if the planned programs outlined in the directive documents for economic growth had been fully realized. Unfortunately, as in the Ninth and especially in the Tenth five-year plans the growth rates of industrial and agricultural production were below the planned rates; important deposits were not assimilated. Shortcomings were noted in long-range and current planning and in the disproportion between individual sectors of the national economy.

For example, the more important projects of the republics fuel and power base were behind schedule - the Gusinooserskaya GRES and the Kholbol'-dzhinskiy coal field. For a long time the capacities of the Selenginskiy cellulose-cardboard combine have not been fully used because of errors made by the designers in planning the timber raw material base. Difficulties are having a negative effect on the throughput of cargoes on the Transsiberian railroad; and the transportation situation in general is not good. The base of the construction industry is lagging behind.

The republic's agriculture is experiencing many difficulties. Unending droughts torment us. At the same time land reclamation and the use of chemicals have not acquired the needed scope. Therefore, while there has been a substantial growth in production in recent years, the consumption per capita of certain agricultural products, especially meat and vegetables, remains at the same level.

The republic still lags behind other regions of Siberia in several indicators of social development, including the availability of well-appointed housing, medical and childrens' institutions.

In the republic there are significant opportunities to develop several sectors of industry and agriculture. The main directions have now been clearly defined.

We are speaking primarily about the more complete use of mineral raw materials. Within the republic dozens of deposits have been explored. The Ozernoye enrichment combine will be created to work these deposits. Here, apart from the rich lead and zinc concentrates, they will also extract up to two million tons of pyrite concentrate, from which we can extract an amount of sulfuric acid equal to that now transported to Siberia and the Far East from the European portion of the country.

The creation of sulfuric acid production will make it possible to chemically convert apatite concentrate at the Oshurkovskiy ore enrichment combine, now under construction, and to produce phosphorous fertilizers which Siberia so needs. For this reason it is logical that we from the very beginning of the Eleventh Five-Year Plan speed up the construction of the Ozernoye and Oshurkovskiy combines. We must assimilate these deposits according to a comprehensive plan, which will make it possible to build the new Eastern Buryat TPK /Territorial-production complex/. The ministries of the nonferrous metallurgy, the chemical industry, the timber and wood-working industry, of construction in regions of the Far East and the Lake Baykal area, and the construction materials industry must participate in the formation of the TPK. Only the USSR Gosplan and the USSR Gosstroy can unify the efforts and resources of these ministries.



I would especially like to say a few words about the assimilation of the Cheremshanskiy deposit of quartz sandstone. It was explored some time ago. The sandstone is remarkable for its high quality and is located about 90 kilometers from Ulan-Ude. The Ulan-Ude glass plant and metallurgists have great need of quartz sand. As early as 1972 a decision was made to construct the Cheremshanskiy ore-enrichment combine; however, this decision was not carried out. I can say that this question has still not been fully resolved. The ministries of industrial construction materials of the USSR and the republic are preparing to transport sand from Tomsk. Superior sand is nearby. This is an unwise approach to business.

One of the key tasks is to develop the fuel and power base at a rapid pace. Estimates show that as early as 1985 the shortage of electric power in the republic will reach 2.5 billion kilowatt-hours. In addition, a significant amount of power will be needed for transfer to Mongolia. Therefore, we fully support the proposals of the USSR Ministry of Power and Electrification to construct the second section of the Gusinoozerskaya GRES and to bring its rated capacity to 2,100,000 kilowatts. Moreover, this needs to be done as soon as the first section is completed, using the created collective of builders.

To supply the power station it will be necessary to significantly increase the extraction of coal. A large coal mining region can be created in the republic at the Tugnuyskiy basin base, the reserves of which exceed 1.2 billion tons. A decision was made on this matter as early as 1972; it called for the introduction of capacities to extract 9 million tons of coal in the Tenth Five-Year Plan. The USSR Ministry of the Coal Industry has not fulfilled this decision.

In the northern area of the Buryat ASSR, where the BAM passes through the republic, several mineral deposits have also been discovered and studied. These include deposits of asbestos, polymetals, zinc and construction materials. The closeness of such large deposits to the BAM in combination with other natural resources makes it possible to create a large Northern Baykal TPK. The construction of the Moksakaya GES on the Vitim River will fully supply this region with electric power. While the BAM builders are still around, it would be wise, making use of their capacities and personnel, to begin the construction of production projects. Among the key tasks we see the assimilation of the richest deposit of textile asbestos, which is located only 25 kilometers from the BAM tracks.

The republic's territory is almost completely within the watershed of Lake Baykal. For this reason we have special responsibility to protect nature and the waters of Lake Baykal. Work in this direction is giving positive results. However, we are concerned about the state of affairs with the use of timber resources, the reproduction of fish reserves, and the conservation of water sources.

More than half of the territory of the republic is covered by timber. The development of the timber industry must proceed toward the more complete processing of felled timber and moving the cutting into the timber-rich northern regions. I must say that the USSR Ministry

of Timber and Wood Processing Industry is in no hurry to solve these questions. For dozens of years they have been intensively cutting timber near the railroads; this leads to erosion and the depletion of water sources. It also clearly affects the water supplies of Lake Baykal. Reducing the amounts of raw timber procurements is an urgent question. The USSR Gosplan and the Academy of Sciences and other involved departments should carefully study the situation that has evolved. Major steps need to be taken to strengthen the forest fire fighting service; forest fires do great damage.

The construction of fish farms and pond farming facilities is behind planned schedules; this is affecting the reproduction of fish reserves.

The problem of reproducing valuable species of fish in Lake Baykal awaits a comprehensive solution. The ban on catching the omul' has been in effect for 12 years. This measure has produced no noticeable results. The constant commercial catching of fish on Lake Baykal needs to be seriously studied. We feel that the entire Lake Baykal basin needs to be more carefully studied than it is now. All of these questions must be reflected in the "Siberian" program.

In connection with the change in the siting of industry, substantial shifts will take place in agriculture. For example, a reliable food base must be essentially created anew to supply the population that is growing in the BAM zone. On our section of the BAM railroad there now live more than 50,000 people. Soon there will be 100,000 people. The production of foodstuffs can be organized in the Barguzinskaya basin, which extends to the BAM from the south. There are tens of thousands of hectares of land here which can be irrigated but substantial outlays will be required. It would be wise to include the Barguzinskaya valley in the BAM area. This will make it possible to develop agricultural production in the area according to the comprehensive plan for its economic assimilation.

In recent years the Buryat ASSR has been lagging behind the other regions of Siberia in regard to income of the population; the loss of skilled workers is increasing. In this situation, raising the zonal salary coefficient, introducing in all sectors of the republic's national economy longevity pay, establishing retail prices for goods at the first zone level, and expanding the scale of housing construction would play a positive role.

These measures, along with the comprehensive approach to the development of production forces, will ensure the rapid development of the Buryat ASSR's economy.

## Krasnoyarsk Kray

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOG PROIZVODSTVA (EKO)  
in Russian No 2, Feb 81 pp 26-31

/Article by P. S. Fedirko, First Secretary of the Krasnoyarsk Kray Party Committee: "At the Threshold of Krasnoyarsk's Second Ten-Year Plan"7

/Text7 Krasnoyarsk's Ten-Year Plan has ended - a unique economic experiment, which has made it possible to comprehensively develop the kray's production forces. Observing the principles of comprehensiveness has been very important to us.

Already the kray possesses a large industry and construction base and relatively developed transportation and communications systems. Agriculture has everything that it needs to meet the needs of its population. It is natural that such a unique combination of a powerful source of electricity and raw material resources should be used comprehensively, on the basis of a long-range program such as the Krasnoyarsk Ten-Year Plan, which began in February 1971.

At that time according to our common proposals, in the drafting of which participated the Siberian Branch of the USSR Academy of Sciences, the KYePS /Standing Commission for the Study of Natural Production Forces of the USSR Academy of Sciences7, the SOPS /Council for the Study of Production Forces7 of the USSR Gosplan, and TsENII /Central Economic Scientific-Research Institute7 of the RSFSR Gosplan, a special decree was passed concerning measures for the comprehensive development of the production forces of Krasnoyarsk Kray during the period from 1971 through 1980. Based on this decree we began to form large industrial centers and territorial-production complexes, taking into consideration the simultaneous development of the production and non-production spheres.

During the course of accomplishing this program, the Sayanskiy TPK /territorial-production complex7 and the Krasnoyarsk and Noril'sk industrial centers were developed, as were the Achinsk and other industrial centers. Hundreds of important national economic construction projects were completed during these years. It is sufficient to say that within just four years of the ten-year plan more than 350 such projects were completed. As a result the volume of industrial production more than doubled; the economic growth rates exceeded the average for the Soviet Union.

However, far from everything is as it should be here. In analyzing the results, one may say, that at several enterprises new capacities are being assimilated slowly. Moreover, in several cases this is caused by the fact that as before there is a lag in the infrastructure, particularly the construction of housing and facilities for social and cultural purposes.

Not for all types of raw material have we managed to create such technological links as we managed, for example, from the extraction of alumina to the production of rolled aluminum and individual articles from it.



Modernization work on several enterprises has proceeded slowly; the transportation network is being developed on a piece-meal basis; agriculture has been long in switching to intensive methods; and in capital construction progressive materials, including synthetic insulation, are still being used timidly. There are also shortcomings in other sectors of the national economy. A key shortcoming is the fact that we and the ministries and departments still have not succeeded in creating a rational production and social infrastructure within the kray.

Still the results of the comprehensive program convince us that this approach to economic development is the most effective and correct one. Of course, this conclusion is not new. We all fully understand that we do not always observe the principle of comprehensiveness when compiling plans for economic and social development.

Everything that was done during the years of the Krasnoyarsk ten-year plan would have been impossible without the help of the scientists and the expansion of scientific-research work on the development of the kray's production forces. While realizing the comprehensive program, we encountered many difficulties. For this reason the kray party organization from the very beginning sought to raise the scientific potential and to strengthen the ties of Krasnoyarsk scientists with other Soviet scientists, particularly with the Siberian Department of the USSR Academy of Sciences.

As a result within the kray a developed system of scientific-research and design and planning institutions, including the Krasnoyarsk Branch of the Siberian Department of the USSR Academy of Sciences, was created. And this is yielding results. First, scientific-research and designing institutes, management and economic organizations in conjunction with Soviet scientists and party and government organs have come up with a comprehensive, regional program for the further development of the kray's national economy up to the year 1990.

Second, based on the basic tasks for the further development of the kray's production forces and the requirements of the regional technical policy, the kray party committee has asked the scientists to begin work in identifying and studying the major scientific-technical problems. Leading kray specialists and outstanding scientists and collectives of the institutes of the Siberian Department of the Academy of Sciences have participated in this work. The list of major scientific-technical problems that they compiled includes improving the structure of the economy and organizing the management of the kray's national economy, solving crucial intersectoral tasks, and developing the leading sectors. This list was studied and approved by the USSR State Committee for Science and Technology. It is a practical guideline for the realization of the regional comprehensive program for the period 1981 through 1990.

Of course, the new ten-year plan will be structured on the basis of the directives being developed by the 26th Party Congress. But it is perfectly clear to us that it is in alignment with the first Krasnoyarsk ten-year plan. Thus, work on the Sayano-Shushenskaya GES will



be completed. The GES is the power center of the Sayanskiy TPK, which in the forthcoming years must attain its completed borders. We must complete a gigantic amount of work to form the Kanako-Achinsk fuel and power complex (KATEK). A southern industrial center is being created for the complex, including the Berezovskiy open pit mine No 1 capable of producing 55 million tons of coal and the Berezovskiy GRES-1 which will equal the rated capacity of the Sayano-Shushenskaya GES - 6.4 million KW. The construction of a new city for the coal and power workers has gotten underway.

The construction of the Krasnoyarsk heavy machine building plant, the product of which will be used primarily in open pit coalmines, is closely linked with the KATEK. In production output and importance to the Soviet Union this enterprise is on a level with KAMAZ /Kama Truck Plant<sup>7</sup> and Atomash /atomic power machine building production association<sup>7</sup>. The completion dates for the first section of the enterprise are near - by as early as 1984 the plant is to turn out its first product.

Along with the growth of the KATEK the development of power engineering will also proceed through the construction of new hydroelectric power stations within the Angaro-Yeniseysk basin: the Middle-Yenisey, the Turukhanskaya, and the Osinovskaya hydroelectric power stations.

There are many concerns connected with the development of existing industrial centers, particularly the Noril'sk industrial region and on a broader scope the Northern Yenisey TPK. The assimilation of the Angara River area, which includes the territory within the basin of the Middle Yenisey River and the Lower Angara River, is very important. The construction of the Boguchanskaya GES with a rated capacity of 3 million KW has already gotten underway.

The high evaluation of the prospects of oil and gas deposits in Krasnoyarsk Kray makes it possible to plan the creation of a major oil and gas bearing base here. In connection with this there are plans to sharply increase exploration in the area. There are also plans to develop ferrous and nonferrous metallurgy, the petrochemical and chemical, timber and wood-working industries in the area, as well as construction materials bases. And, of course, there will be an increase in agricultural production.

In the near future it will be necessary to achieve what we were unable to do earlier: a complete balance between the production and nonproduction spheres. It is no accident that they call our kray a construction site. But in improving the construction complex we have run into quite a few problems. We see the solution in the further increase of capital investments for the creation of progressive building structures suited to Siberia and the Far North, and also in the use of local construction materials.

For the time being the production of local construction materials, including from the wastes, has for all intents and purposes not been included in the plans for the comprehensive development of the TPK and

the industrial centers. Inadequate attention is being given to the geological prospecting for the raw materials for construction materials. In some cases provision is not being made for the anticipated creation of a production base for construction. Several technological processes even within the basic production facilities have been installed by the designers without adequately taking into consideration the climatic conditions.

At the local level specific measures are being taken to solve these tasks, but for some matters we require the assistance of the central organs.

We would ask the Siberian Department of the USSR Academy of Sciences which is fully equipped with all the basic sciences (physics, chemistry and mathematics) to concentrate on the technology of construction in conditions of Siberia and the Far North. It is important to include the direct attention of Gosstroy in this problem by, if possible, creating a special branch of the Central Scientific-Research Institute of the USSR Gosstroy.

There is one more age-old problem - retaining personnel. For now we are unable to solve this problem because of the lag in the construction of facilities for cultural and domestic needs. For example, at KATEK construction projects, where young people predominate, we have only 31 spaces in the nurseries and kindergartens per 1,000 residents against an average indicator for the RSFSR up to 70. The availability of mass forms of cultural and domestic services for the population does not exceed 70 percent of the Gosstroy norms.

In our opinion, it would be wise for each five-year plan to determine a priority for the key construction projects of Siberia as well and of entire economic regions in order to fully deal with the problems of planning and financing, perhaps, using regional branches of such organizations as TSENII under the RSFSR Gosplan or SOPS under the USSR Gosplan.

#### Novosibirsk Oblast

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 2, Feb 81 pp 32-38

/Article by A. P. Filatov, First Secretary of the Novosibirsk Oblast Party Committee: "Governed by the Scientific Approach"/

/Text/ The forthcoming five-year plan and the decisions which will be made by the 26th Party Congress are a new stage in accomplishing the long-range policy of the Party in the field of the social and economic development of the Soviet Union, including its eastern regions. Valuable ideas and indications on this matter were expressed by L. I. Brezhnev during his trip through Siberia and the Far East. The bottom line of his words is that the rapid development of the industry of this vast area based on the comprehensive use of highly-effective fuel and

power resources is not a short-term campaign but a constant factor in providing for the high growth rates of the Soviet national economy.

Novosibirsk Oblast has an adequately developed industry and agriculture; and it has a significant scientific-technical potential. Eighty percent of its production is made up of machine building products, radioelectronics, electrical equipment and metal processing. Forty percent of its power machine building product, one third of its tools and instruments, and one fourth of its machine tools and equipment are shipped to areas east of the Ural Mountains. Nearly 400,000 tons of milk, 25 tons of meat, 60 percent of its eggs and quite a few potatoes and vegetables are also sent to areas east of the Urals. To a certain extent this determines the oblast's position in solving overall Siberian tasks.

The comprehensive development of Siberia, as in Novosibirsk Oblast where the labor shortage is acutely felt, is closely linked with hastening the rates of scientific-technical progress. This, in turn, requires an increased role for science.

The Novosibirsk Oblast Party organization at all stages of establishing and developing academic, sectoral and VUZ sciences has devoted very careful attention to the connection between basic and applied research. In 1979 at the plenum of the oblast party committee careful analysis was devoted to the experience of scientific-research institutes, their ties with industrial and agricultural enterprises; they also studied ways to increase the effectiveness of scientific institutions. Questions concerning the speeding up of scientific-technical progress and adopting advanced experience were thoroughly discussed in the party organizations and at rayon and city party committee plenums. With the active participation of the scientists, scientific-practical conferences, science days, and joint sessions of the party committees of the scientific-research institutes and the production enterprises were held on a regular basis. Under the rayon and city party committees there are functioning councils to effect the adoption of the achievements of science and technology.

In analyzing the forms for the development of ties between science and production during the past 20 years, three basic stages can be discerned:

- at the first stage the results of scientific work-ups were used predominantly at individual large enterprises;
- at the second stage the results were adopted throughout the sector;
- at the third stage intersectoral comprehensive and regional programs are formulated.

The development of comprehensive designs of key national economic importance in recent years has become one of the basic tasks in the activity of Party organizations and all levels of science and production.



One of these programs, which the oblast party organization has been studying for ten years to accomplish, can be called the "Adoption" program. Its goal is to put scientific developments into practice as quickly as possible; it has been transformed into a specific system of functional ties between the "scientific subelement and the enterprise."

Each year the oblast's industry in cooperation with science creates and assimilates approximately 130 new models of machines, equipment and instruments, more than 50 means of mechanization and automation. Labor-saving technologies, such as the use of explosion, are being extensively adopted.

But along with the indisputable successes there are also substantial delaying factors. New scientific developments require the more extensive organization of experimental production facilities and shops at enterprises and in scientific-research institutions. Of course, these are not new questions. But the urgency of their solution has appeared with new force in the course of realizing the "Adoption" program, when the accomplishment of scientific developments from sporadic actions is turned into a production norm. The management of experimental production facilities and raising the quality of the work of a special design bureau of the "zone of adoption" we believe to be one of the important tasks of the oblast party organization.

A new manufactured article requires improved technology and quality of processing, and consequently, improved equipment. In Novosibirsk the percentage of metal cutting machine tools older than 10 years is reaching 53 percent (the national average is 45 percent). Oblast industry is poorly equipped with machine tools with numerical control; it receives few processing centers and highly-productive automated production lines, etc. This not only limits the opportunities to increase labor productivity, but in view of the chronic shortage of labor resources it reduces the opportunity to make full use of fixed assets and slows the assimilation of the new machines and equipment needed by the developing territorial-production complexes of Siberia.

It would be correct to give preferential treatment to equipping Siberian enterprises with highly-productive equipment and to keep more that has been created here. At our plants on a larger scale we can manufacture and adopt means of automation, industrial manipulators, ASUTP /automated system for controlling the technological process/ systems and other labor-saving equipment. There is a need to expand the base for scientific instrument building.

There are also other problems connected with the need for the centralized production of tools, casting, equipment repair, maintenance of numerically controlled machine tools, the creation of computer centers for collective use. All of these questions need to be carefully studied and solved.

A key link in the development of production forces is the creation of a Siberia-wide food base, which is connected with the further development of agriculture.



Novosibirsk will hand over to the state more than one million tons of grain, one million tons of milk, 200,000 tons of meat and a half billion eggs. Siberia's needs for agricultural produce, which are ever increasing due to the intensive industrial assimilation of the region, constantly require a significant expansion of agricultural production. The comprehensive agricultural program of Novosibirsk Oblast for the years 1980 through 1985 has been devoted to solving this task. The program calls for several measures to increase the production of grain to 3.5 - 3.8 million tons and livestock feed to 5.2 million tons of feed units, which will ensure an established sale to the state of not less than 1.5 million tons of grain and will fully meet the needs of livestock raising for feed.

In the development of the comprehensive program for increasing the production of grain and livestock feeds, which was under the auspices of the Siberian department of VASKHNIL (All-Union Academy of Agricultural Sciences) and the USSR Academy of Sciences, practical workers participated extensively. Specific proposals were developed for each region and farm. Significant changes were planned for the technology of raising, procuring and processing feeds. The basis for reproducing the herds was raised in quality. And industrial methods for obtaining milk, meat and wool were extensively adopted. This program was thoroughly discussed in the primary, rayon and city Party organizations and was the subject of consideration at the plenum of oblast party committee.

But fulfillment of the program will run into difficulties, if the park of tractors, combines and especially motor vehicles is not modernized and increased. This is dictated by the compressed time periods of spring field work and particularly harvesting operations and by the unstable weather conditions of Siberia.

Particular mention should be made of the fact that soil continues to lose nutrients. In connection with this we must increase the transport of organic fertilizer and increase the use of peat, the supplies of which are very great in Siberia. We have already started this work, but the rates are still slow.

Extensive irrigation work in the oblast promises to provide a large increase in grain and livestock feed. The transfer of water from the Ob' River to the chronically drought-ridden steppes of Kulunda by using the channels of living as well as dried-up streams for simple relief of the steppe regions is a very advantageous matter.

Several large lakes with the restoration of their former water area can be included in the proposed irrigation system. The accumulation of melted snow in these large natural reservoirs will suffice to sharply increase the production of fish. For this reason it is clearly advantageous to hasten the completion of the technical-economic justification to transfer water from the Ob' River into the Karasuk River and Lake Chany so that the construction of this important complex can be started as soon as possible.

We must hurry to develop a general plan for the comprehensive assimilation of the Barabinskaya lowland, the land reclamation fund of which is nearly three million hectares. The accomplishment of new plans in a basic way will increase the agricultural potential and will significantly expand the food base of the region.

Novosibirsk is a large transportation center, located at the intersection of key railroads which connect the eastern region of the Soviet Union with the developed European regions, as well as with the Kazakh SSR and Central Asia. However, the freight flow on several railroads is accommodated with great difficulty.

The freight load of the Transsiberian Railroad within the oblast is six times greater than the average for the line. To accommodate the growing freight flow, it would be necessary to do comprehensive studies on the Novosibirsk transportation center, including the development of stations, building third tracks, and achieve a clear coordination of the efforts of railroad, water and motor transport. We must increase the pace of constructing highways in the oblast. There are significantly fewer highways in the oblast than on the average for the RSFSR.

To solve these problems requires that construction organizations and the construction industry base be significantly built up. The oblast is experiencing a chronic shortage of wall materials, crushed rock and lime, when there are adequately large and well explored supplies of these raw materials. Increasing the capacities of existing enterprises and the construction of new enterprises would make it possible not only to make up the shortage in Novosibirsk Oblast but also to noticeably improve the situation with construction materials in neighboring regions. These measures are especially important for the development of the infrastructure, which occupies an important position in the comprehensive program "Siberia."

To successfully assimilate the natural riches of Siberia, we must attract skilled workers into these regions. Unfortunately, we do not have such a stable tendency. And the problem is not so much the weather as it is the lag in the development of the infrastructure, primarily the construction of housing. In Novosibirsk in the past five years production volume has been steadily expanding, but the construction of housing and social-domestic facilities has been falling behind just as steadily. As compared with the start of the Ninth Five-Year Plan, in the Tenth Five-Year Plan Novosibirsk was receiving 100,000 square meters of housing less. This situation can partially be explained by shortcomings in the work of builders, but the main reason is a reduction in appropriations.

The disproportion in the development of the social infrastructure and industry, in our opinion, has become one of the serious factors delaying the development of public production. Today several managers are concentrating most of their attention on the building of production facilities and less attention on the construction of housing. While expenditures for housing can most effectively be invested in production, too often new plants operate for a long time at less than full capacity and highly-productive equipment stands idle due to the lack of

skilled workers. It must be understood at all levels that the infrastructure must be developed on an equal basis with production capacities and in a balanced manner.

In 1978 the Siberian Department of the Academy of Sciences and the RSFSR Ministry of Higher and Specialized Education drew up a contract that called for broad contacts between academic and VUZ science to organize joint research, the probation of VUZ teachers and their targeted training for academic post-graduate study. This is already providing positive results. However, the availability and quality of training specialists in various sectors are far from identical. There is a lag primarily in construction and in the service sphere, which to a large extent determines the shortcomings in these fields. Particular alarm is caused by the condition of the student and experimental base. Students often study on outdated equipment, without considering the latest achievements of science and technology. In the oblast there are good examples of the cooperation between the institutions of science and higher learning in training specialists; for example, the experience of Novosibirsk University. But today we must not speak about individual examples, but about a system of close cooperation between scientific and teaching institutions and enterprises. In Novosibirsk there are the prerequisites for an experiment on the comprehensive training of specialists of all ranks and interests. We feel that the RSFSR Ministry of Higher and Specialized Education, the State Committee for Professional-Technical Education and the Siberian Department of the USSR Academy of Sciences and the ministries with the participation of the oblast party organizations will be able to develop and accomplish such a program.

#### Yakutsk Oblast

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO)  
in Russian No 2, Feb 81 pp 39-43

[Article by G. I. Chiryayev, First Secretary of the Yakutsk Oblast  
Party Committee: "The Industry of the Northern Republic"]

[Text] At the 25th Party Congress the basic directions for the rapid development of the eastern regions of the Soviet Union were determined. In adding up the results of the past five-year plan on the eve of the 26th Party Congress, I want to note first of all that the economy of the Yakutsk ASSR is developing at rates which noticeably exceed the all-union average; its economic and scientific-technical potential is steadily growing. During the past ten years basic industrial-production assets have increased 3.3-fold. Industry accounts for more than 80 percent of the republic's gross product. Capital investments in the development of the republic's national economy during the Tenth Five-Year Plan as compared with the Ninth Five-Year Plan nearly doubled. Moreover the relative capital investments on a per capita estimate in 1979 exceeded the all-union average by better than 2-fold. This demonstrates that the Yakutsk ASSR has become a region of intensive economic assimilation.



Within the all-union division of labor Yakutsk is seen as a large industrial mining region specializing in the extraction of nonferrous and other minerals in short supply in the Soviet Union. In spite of the fact that the area still has not been fully explored, the Yakutsk Republic contains the West Yakutsk diamond field, the Aldanskiy and Yano-Kolymaskiy gold fields, the Yanskiy tin field, the Yano-Indigirskiy antimony field, the Sette-Dabanskiy polymetal field and the Leno-Vilyuyaskiy oil and gas fields, the Southern Yakutsk iron ore region, the Aldanskiy phlogopite and apatite fields, the Lenskiy, Southern Yakutsk and Zyryanskiy coal basins. Deposits of mercury and bitumen have been discovered in Yakutsk; and copper and tungsten ores have been partially explored. We know of many other minerals, including rare earth elements. The assimilation of many of them is sufficiently justified by scientific research and designing and prospecting work.

How can the production forces be further developed in our conditions? For this region standard methods of economic management do not apply. First of all, priority must be given to the use of the latest achievements of science and technology. The use of equipment with a large per-unit rated capacity, for example quarry dumptrucks with a carrying capacity of 120 to 180 tons, excavators with a bucket capacity of 20 cubic meter and highly-productive coal equipment makes it possible to free a large number of workers for other tasks. The creation and production of equipment for the North is a national task, the solution of which must be hastened by the appropriate ministries. The shortage of such equipment costs the Soviet Union billions of rubles each year.

Measures to reequip must be accompanied by steps to keep workers on the job in the North, to reduce their turnover by extensively training specialists from among the region's young people. It is important to create modern, comfortable housing and living conditions on an adequate scale.

The comprehensive development of the economy in the North requires that transportation construction be carried out rapidly. For now the transport system of this area is inadequately developed. While for the nation as a whole the percentage of transportation outlays in product cost is 10 to 12 percent, in the North it is 50 to 60 percent.

The largely seasonal operation of transport freezes up large material resources for no good reason, has a negative effect upon satisfying the demand of the population for goods, and disrupts the rhythm of production processes. The creation of increased supplies in turn increases the additional need for transport, warehouses, work force, capital investments and operating costs.

In the future the transport of cargoes into our republic will increase at rapid rates. The existing transportation system even if it is significantly modernized will not handle the transport of the new amount of cargoes. In these conditions the only realistic and effective thing to do is to build a railroad from Berkakit to Yakutsk.



Analysis performed by the Yakutsk Branch of the Siberian Department of the USSR Academy of Sciences proves that by improving the transportation network of Yakutsk and a growth in labor productivity in the transport and supply sectors by 1990 the national economy can receive an additional savings in capital investments of 1.1 billion rubles and in annual operating costs of 150 million rubles. There will also be an opportunity to reduce production personnel by 50,000 men. Our estimates have been approved in the central organs.

The next problem is the rapid development of power engineering. During the Tenth Five-Year Plan the production of electric power in the Yakutsk Republic increased by 52.5 percent. In spite of this, the shortage of electricity is delaying the development of the economy. We think it is rational to build large hydroelectric power stations in the North, including thermal power stations (in places where inexpensive coal is already available) and in the near future to completely do away with local diesel electric power stations.

Starting now we should study the construction of hydroelectric power stations on the rivers of the Yakutsk ASSR. We must speed up the creation of the Vilyuyevskiy GES-3, the Adychanskiiy GES, the Yakutsk GRES-2. A large electric power station was recently completed in Southern Yakutsk that operates on enrichment products and the inexpensive oxidized coal from the Neryungri mine.

We place great hopes upon natural gas and, possibly, oil. The need to improve the structure of the fuel balance of the eastern regions through the use of economical kinds of fuel will make it possible to discuss the expensive assimilation of the oil and gas deposits of the Yakutsk ASSR. At present geological exploration work is underway, basically in two oil and gas bearing regions where several deposits of natural gas and oil have been discovered. The prepared supplies and real prospects provide good reason to create a large natural gas complex capable of meeting the needs of the Far East and export.

Nonferrous metallurgy, which has a reliable material and mineral base, will retain its important role. As before the gold extraction industry will occupy an important place. To develop the auriferous deposits it will be necessary to have powerful quarry and step excavators, large carrying capacity trucks, conveyor and other forms of transport. It would have been good to have been concerned about this earlier. Much importance is attached to the extraction and enrichment of placer gold deposits and the construction of new dredges.

Diamond mining has been created and is being successfully developed within a comparatively short period of time in Yakutsk. The prepared material base will make it possible to dynamically develop this sector through the construction of enrichment capacities, the extensive adoption of the newest equipment and the constant improvement of the technological processes. We feel that for the further successful operation of the sector it would be wise to speed up the accomplishment of the "Yakutsk diamonds" program, which was drafted by the Siberian Department of the USSR Academy of Sciences.

The Yakutsk ASSR has tin supplies that are adequate to organize its own production. However, in spite of this, the Soviet Union spends significant amounts of currency on the import of tin. The USSR Ministry of Nonferrous Metallurgy is not showing enough interest in the creation of new production capacities. For example, the construction of the Deputatskiy ore enrichment combine at the tin ore deposit of the same name is proceeding very slowly.

I will briefly discuss some of the problems connected with the comprehensive development of Yakutsk and the formation of the territorial-production complexes. The Southern Yakutsk TPK, which was constructed in accordance with the decisions of the 25th Party Congress, is the first of such complexes. It is the Southern Yakutsk that is connected with the new stage in the development of the republic's economy; the extensive industrial assimilation of the rich resources of this region with an unusually high concentration of minerals is characteristic of few places on earth. Here near the BAM a large coal complex is the first to be created on a compensation basis; its product will go to the Far East and for export. Moreover, it has been shown that the export effectiveness of Yakutsk coal is rather high. Not so long ago the author of a respectable monograph felt there was no reason to search for coking coal in the south of Yakutsk.

The creation of a coal complex is only the first stage in the formation of the South Yakutsk TPK, the key enterprise of which, in our opinion, must be the metallurgical plant. For this there are favorable raw material and economic prerequisites. In the region in addition to the coal basin (with projected reserves of 44 billion tons (of which more than half are coking coal) there are two iron ore regions with projected reserves of 19 to 22 billion tons, including 9 billion tons for surface mining. Nearby there are nearly all kinds of auxiliary raw materials for metallurgy. A railroad has already been built to the proposed construction site.

In view of these factors, I can say about Yakutsk that it has iron ore, coking coal and, very important, natural gas. Such a combination is hard to find anywhere. In several years new railroads will be built, including the BAM, and Yakutsk ASSR will be the fourth largest heavy industry base in the Soviet Union.

The preferential siting of the Far East Metallurgical Plant in southern Yakutsk has been supported by many scientific institutions. However, there are varying opinions about the specific location of the future plant. This apparently stems from the inadequate pre-design planning work. We feel that the construction of the plant should not be viewed from only last minute economic considerations. The task should be viewed from a broader perspective, taking into consideration the distant future. The Yakutsk Branch of the Siberian Department of the USSR Academy of Sciences has carefully studied the various options for siting the plant; it has determined that the most rational location is in Chul'man.

There is yet another facet of the South Yakutsk complex - the opportunities to produce mineral fertilizers. The growing need of Siberia and the Far East for phosphates, which are generally scarce throughout the Soviet Union, also contributes to this. The problem can partially be solved on the base of the surface deposits of apatite in Southern Yakutsk, especially the Seligderskiy deposit with projected reserves of ore of 2.5 billion tons.

In this manner a large territorial-production complex will be created in Southern Yakutsk. The complex will have a multi-sectoral structure and a high national economic efficiency. This complex, in the words of economists, will be the industrial pearl of the BAM region and of the entire region east of Lake Baykal.

But to quickly and successfully form the Yakutsk complexes, it is necessary to expand scientific research in the more important sections of basic and applied sciences. An important event in the life of all Siberia is the development of the "Siberia" super program. Within the framework of this program the scientists of the Yakutsk ASSR have been given the task of fulfilling the "Diamonds of Yakutsk", "Oil and Gas of Yakutsk" and the "South Yakutsk TPK" programs.

In 1980 within the Yakutsk Branch of the Siberian Department of the USSR Academy of Sciences the Institute of Mining Affairs in the North was organized. Next in line is the creation of the Institute of Economics of the North and a computer center, both of which have long been needed. The strengthening of the material-technical base of the scientific institutions of the Yakutsk ASSR is also an urgent matter.

#### Tuva ASSR

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO)  
in Russian No 2, Feb 81 pp 46-49

/Article by G. Ch. Shirshin, First Secretary of the Tuva Oblast Party Committee: "New Horizons of the Tuva ASSR"/

/Text/ The workers of Tuva - the youngest autonomous republic of the Soviet Union - live and work in step with all Soviet people. During the years of Soviet power, dozens of industrial enterprises have been built in the Tuva ASSR, including cobalt and asbestos combines, open pit coal mines, thermal electric power stations, and enterprises for the construction industry, the light, food, meat and dairy industry, high-voltage electric power transmission lines and highways.

The economic and social and cultural development of the Tuva ASSR has speeded up significantly since December 1976 when a decree was passed concerning the comprehensive development of the production forces of the Tuva ASSR. During the first four years of the Tenth Five-Year Plan the volume of industrial production increased by 23 percent. And 58 percent more fixed assets were put into operation than during the same time period in the Ninth Five-Year Plan. Individual incomes increased by 19 percent and the volume of retail goods turnover of state



and cooperative trade increased by 23 percent, per capita consumer services by 27 percent, including by 34 percent in rural areas.

In noting the successes, we clearly see the difficulties and unsolved problems. Due to objective circumstances connected with the belated entry of the Tuva ASSR into the arena of socialist construction and its backwardness in economic and cultural matters in the past, the development of the Tuva ASSR's production forces still lags significantly behind its neighboring administrative-economic regions in Siberia. This development level does not correspond to the republic's actual potentials.

The main factors contributing to the delay in the republic's development, in our opinion, are: the inadequate development of the transportation system and the lack of a railroad; an inadequate amount of geological prospecting; the lag in the social and living spheres and a shortage of skilled personnel; the poor level of scientific, designing and pre-planning studies of the problems hindering future development.

There are significant amounts of natural resources in the Tuva ASSR. Nearly 400 deposits and ore-bearing traces of minerals have been discovered, including: bituminous coal, asbestos, cobalt, mercury, zinc, lead, copper, molybdenum, rare metals, iron ores, salt, construction materials, and others.

The Tuva ASSR is rich in land, water and biological resources. On a per capita estimate our indicators are higher than the average for the RSFSR: total space - 6-fold and agricultural fields - 16-fold. The Tuva ASSR occupies sixth place in available pasture land in the RSFSR. Nearly 50 percent of its territory is covered by forests; there are more than one billion cubic meters of timber in reserve. Water resources amount to 63 cubic kilometers.

In April 1980 a scientific-practical conference was held in Kyzyl. The conference dealt with the problems of developing the production forces of the Tuva ASSR. The conference was organized by the Tuva Oblast Party Committee, the Tuva ASSR Council of Ministers, the Central Economic Scientific-Research Institute of the RSFSR Gosplan, the Institute of Economics and the Organization of Industrial Production of the Siberian Department of the USSR Academy of Sciences, the Institute of Geology and Geophysics of the Siberian Department of the USSR Academy of Sciences, the Siberian Department of the USSR Academy of Medical Sciences, the Siberian Scientific-Research Institute of Agricultural Economics of the Siberian Department of VASKHNIL. All of these organizations contributed significantly to the justification of the directions for the development of the Tuva ASSR's national economy in the future.

The task for forming the Tuva ASSR territorial-production complex is outlined. The opinion of local party and council organs concerning this matter was supported by leading scientists of the Siberian Department of the USSR Academy of Sciences, which responds to the tasks put forth by the decree concerning the further comprehensive development of the production forces of the Tuva ASSR.



In our opinion, the mining and extraction industry forms the foundation for the Tuva TPK. The majority of the deposits contain raw materials of a high quality.

However, to accomplish these plans it is necessary to speed up exploration work throughout the republic. The assimilation of the deposits will require an increase in energy consumption. From our point of view, a reliable source of electric power can be provided by the 220 MW high-voltage power transmission line from Shushenskoye to Kyzyl. According to promising plans, power consumption in the Tuva ASSR is increasing significantly beyond 1985. This requires the creation in the Tuva ASSR of a reliable and economic power base using the hydroresources of the Greater Yenisey River and the bituminous coal of the Ulug-Khemskiy Basin. In solving these questions we will require the assistance of the USSR Gosplan, the USSR Ministry of Power and Electrification and several other ministries and departments.

Much work remains to be done in specializing and concentrating agricultural production. To fully meet the needs of the republic's population for food and to participate in the public division of labor for the production of meat and wool - these are the basic tasks for the specialization of the republic's agriculture. The gross product of the sovkhozes as compared with the indicators of the last four years must be increased.

The Tuva ASSR falls within the zone of critical cultivation. This creates the problem of constructing irrigation systems for 20 to 30,000 hectares each and of substantially increasing the amount of land that is irrigated in the republic. The economic evaluation of agricultural lands cannot be put off because it will serve as the basis for target programs for the production of livestock feed and the basic kinds of livestock products.

These plans for the development of the Tuva ASSR depend upon the rates of capital construction. The volume of construction and installation work by as early as 1985 must increase nearly 2-fold. This will require the creation of a large construction base in the near future.

Transportation is of essential importance. Under the existing transportation system, it is not possible in certain cases to put the republic's natural resources into circulation throughout the USSR or to create large enterprises.

The transportation problem can only be solved by the construction of a railroad to the Tuva ASSR. The opinion of several central planning and economic organs is that the massive flows of cargoes have not yet been formed in the Tuva ASSR, which is in and of itself correct. But this problem is directly linked with the construction of a railroad into the Tuva ASSR. Apparently, in this matter some workers of the planning and economic organs, the scientific-research and design organizations need to overcome a definite psychological barrier.

In the interregional (interoblast) economic ties of the Tuva ASSR an important role can be played by the water route through the Sayano-Shushenskoye GES reservoir. The construction of river moorings, the creation of a ship repair base and the preparation of the river fleet - all of this is on the agenda as measures to assimilate the Sayanskoye reservoir.

In future five-year plans a decisive role in cargo shipments within the republic will go to motor transport. In this regard as the next task to be undertaken is the modernization of highways between Kyzyl and Abakan and between Ak-Dovurka and Abaza, the construction of internal highways and augmenting the park with highly-productive equipment. Universal and specialized bases need to be built in the Eleventh Five-Year Plan to receive and process cargo.

A radical improvement in the supply of petroleum products for transport and for the entire national economy requires the construction of petroleum products pipelines from Minusinsk to Kyzyl.

Until recently the Tuva ASSR was considered one of the regions with a good supply of labor. Economic growth has changed this situation. In the years 1970 to 1978 employment in the national economy increased by 22.4 percent, with a growth in labor resources of 14.5 percent. In the Eleventh Five-Year Plan and later five-year plans it is necessary to improve the training of personnel, to open new professional and technical institutions and to strengthen the base of existing institutions. It is time to expand the network of higher and middle special institutions of learning.

The rapid development of the Tuva ASSR's production forces depends largely upon the scientific soundness of decisions. The time has come to organize in the Tuva ASSR a comprehensive scientific-research institute of the Siberian Department of the Academy of Sciences. Such an institute would systematically and thoroughly study the problems of developing the national economy of the republic and would coordinate the research of other scientific and design organizations.

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